APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/944,598	09/04/2001	Tsuneo Sato	0649-0798P	2439

2292   7590   05/05/2003

BIRCH STEWART KOLASCH & BIRCH
PO BOX 747
FALLS CHURCH, VA   22040-0747

EXAMINER
AMINI, JAVID A

ART UNIT	PAPER NUMBER
2672	7

DATE MAILED: 05/05/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	**Applicant(s)**
Office Action Summary	09/944,598	SATO ET AL.
	Examiner	**Art Unit**
	Javid A Amini	2672

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _6-8 and 17-22_ is/are pending in the application.

     4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _6-8 and 17-22_ is/are rejected.

7)☒ Claim(s) _6-8 and 17-22_ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _05 March 2003_ is/are: a)☒ accepted or b)☐ objected to by the Examiner.

     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

     If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

     a)☐ All b)☐ Some * c)☐ None of:

        1.☐ Certified copies of the priority documents have been received.

        2.☐ Certified copies of the priority documents have been received in Application No. _____ .

        3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

     * See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

     a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _4_ .

4)☐ Interview Summary (PTO-413) Paper No(s). _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: .

Response to Amendment

The Amendment filed on March 03, 2003 under 37 CFR 1.131 has been considered but is

ineffective to overcome the Newman, and Trueblood references.

Amendment to claims:

List of claims:

Claim 17. (New): A color characteristic description apparatus comprising: a multidimensional lookup table producer for producing a multidimensional lookup table; and a compressor for compressing said multidimensional lookup table, wherein said color characteristic description apparatus outputs color characteristic data, which includes said compressed multidimensional lookup table and an identifier for identifying a restoring method for restoring said compressed multidimensional lookup table.

Claim 18. (New): The color characteristic description apparatus according to claim 17, wherein said multidimensional lookup table is produced in accordance with color characteristics of a digital camera.

Claim 19. (New): The color characteristic description apparatus according to claim 18, wherein color characteristics of said digital camera are measured by a colorimeter.

Claim 20. (New): The color characteristic description apparatus according to claim 17, wherein said outputted color characteristic data is synthesized with image data.

Claim 21. (New): The color characteristic description apparatus according to claim 17, wherein said identifier further identifies a repairing method for repairing said compressed multidimensional lookup table.

Claim 22. (New): A method of outputting color characteristic data from a digital camera, said method comprising the steps of: producing a multidimensional lookup table in a color characteristic description apparatus; compressing said multidimensional lookup table in said color characteristic description apparatus; outputting said color characteristic data from said color characteristic description apparatus, said color characteristic data including said compressed multidimensional lookup table and an identifier for identifying a restoring method for restoring said compressed multidimensional lookup table; and synthesizing said outputted color characteristic data with image data, which is then outputted as camera output data.

Amendment to the specification:

On page 1, under the heading "2. Description of the Related Art" the specification has been rewritten as follows:

Fig. 29 shows one of tag types which are elements of a profile for describing a color characteristic disclosed in, for example, "ICC Profile Format Specification, Version 3.3, November 11, 1996, International Color Consortium". Referring to Fig. 29, bytes 0 to 3 are identifiers, 4 to 7 are reserved bytes, 8 is the number of input channels, 9 is the number of output channels, 10 is the number of grid points in multidimensional lookup table to be described later, 11 is a reserved byte for padding, 12 to 15, 16 to 19, 20 to 23, 24 to 27, 28 to 31, 32 to 35, 36 to 39, 40 to 43 and 44 to 47 are encoded parameters e_{ij} (i, j = 0 to 2), 48 to m are input one dimensional tables, m + 1 to n are n-dimensional m bytes (n is the number of input channels and m is the number of output channels) . The above-mentioned table is also called a multidimensional lookup table. Note that n + 1 to o is an output one-dimensional lookup table

Response to remarks on page 6

Page 6, line 17: Applicant discloses that Newman does not support the multidimensional lookup table. On page 7, line 4 applicant defines the multidimensional lookup table of the present invention composed of an input and an output at each of the grid points. Now refer to Fig. 14 of Newman, set 274 is composed of inputs 278 and outputs 280 and grid points (tables) 282. The combination of these three sets are the same as what applicant defined on page 7, line 4.

Applicant also discloses on page 7, lines 12-14, that Newman does not compress a multidimensional grid table, contrary, see Figs. 8A and 8B set 130 performs the compression of graphic data.

On page 8, line 14, the Examiner disclosed explicitly, meaning exactly the phrase of "compression of a multidimensional lookup table" that *Newman* et al. does not disclose.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

1.   Claims 6-8, 17-22 rejected under 35 U.S.C. 103(a) as being unpatentable over Newman,

US 5,208,911, dated September 28, 1990, and further in view of Trueblood US 5,463,702, dated

July 14, 1994.

2.   As per claim 6, Newman et al., hereinafter Newman discloses that one of the aspects of

the invention includes the step of generating at least one multidimensional table containing the

sample values of the composite transform definition (Col. 3, lines 10-20). Also Newman

discloses in Figs. 4 and 7 a method for compressing the image data that contains

multidimensional lookup table (LUT) and transforming the coordinates to identify the color of a

single pixel of the image.

It is noted that Newman dose not explicitly disclose compression of multidimensional lookup

table, however, this is known in the art as taught by Trueblood. Trueblood discloses a method to

truncated to 6 bits per primary color (compression from 8 to 6 bits) see Fig. 5A.

Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was

made to incorporate the teaching of Trueblood into Newman because Newman discloses a

method of image processing systems employing look-up tables for transforming from first

coordinate apace to a second coordinate space. And Trueblood discloses the compression of

lookup table with an identifier to store the LUT, in order to increase its display capability or to

save memory space or to be able to transfer faster from different locations, the compression of

LUTs are essential

3.   As per claims 7 and 8, Newman discloses one of the aspects of the invention includes the

step of generating at least one multidimensional table containing the sample values of the

composite transform definition (Col. 3, lines 10-20). Newman discloses in Figs. 4, 7 and 14 a

method for compressing the image data that contains multidimensional lookup table and

transforming the coordinates to identify the color of a single pixel of the image.

It is noted that Newman dose not explicitly disclose compression of multidimensional lookup

table, however, this is known in the art as taught by Trueblood. Trueblood discloses a method to

truncated to 6 bits per primary color (compression from 8 to 6 bits) see Fig. 5A.

Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was

made to incorporate the teaching of Trueblood into Newman because Newman discloses a

method of image processing systems employing look-up tables for transforming from first

coordinate apace to a second coordinate space. And Trueblood discloses the compression of

lookup table with an identifier to store the LUT, in order to increase its display capability or to

save memory space or to be able to transfer faster from different locations, the compression of

LUTs are essential.

4.   As per claim 17, Newman et al., hereinafter Newman discloses that one of the aspects of

the invention includes the step of generating at least one multidimensional table containing the

sample values of the composite transform definition (Col. 3, lines 10-20). Also Newman

discloses in Figs. 4 and 7 a method for compressing the image data that contains

multidimensional lookup table (LUT) and transforming the coordinates to identify the color of a

single pixel of the image. Newman illustrates in Fig. 14 a set 274 is composed of inputs 278 and

outputs 280 and grid points (tables) 282. The combination of these three sets is the same as

multidimensional lookup table.

It is noted that Newman dose not explicitly disclose the phrase of "compression of

multidimensional lookup table", however, this is known in the art as taught by Trueblood.

Trueblood discloses a method to truncated to 6 bits per primary color (compression from 8 to 6

bits) see Fig. 5A.

Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was

made to incorporate the teaching of Trueblood into Newman because Newman discloses a

method of image processing systems employing look-up tables for transforming from first

coordinate apace to a second coordinate space. And Trueblood discloses the compression of

lookup table with an identifier to store the LUT, in order to increase its display capability or to

save memory space or to be able to transfer faster from different locations, the compression of

LUTs are essential

5.   As per claim 18, Newman teaches in Fig. 2 and also Trueblood teaches in (col. 6, lines 6-

10) using an image file as an input to the present compression process, any other source of a

frame of video could be used as an input (for example, a live video camera attached to a frame

grabbing device, or a raster scanning device could provide a suitable input).

6.   As per claim 19, the step is obvious because in order to be able to distinguish between

two colors for example red and blue one required having access to a colorimeter to detect the

different. The colorimeter is well known in the art.

7.   As per claim 20, the step is obvious because that is one of the function of LUT.

8.   As per claim 21, Newman teaches in Fig. 7(a), the coordinates u', v', L* identify the color

of a single pixel of the image to be transformed, corresponding, for example, to point 42 in the

reference color space.

9.   As per claim 22, Newman et al., hereinafter Newman discloses that one of the aspects of

the invention includes the step of generating at least one multidimensional table containing the

sample values of the composite transform definition (Col. 3, lines 10-20). Also Newman

discloses in Figs. 4 and 7 a method for compressing the image data that contains

multidimensional lookup table (LUT) and transforming the coordinates to identify the color of a

single pixel of the image. Newman illustrates in Fig. 14 a set 274 is composed of inputs 278 and

outputs 280 and grid points (tables) 282. The combination of these three sets is the same as

multidimensional lookup table.

It is noted that Newman dose not explicitly disclose the phrase of "compression of

multidimensional lookup table", however, this is known in the art as taught by Trueblood.

Trueblood discloses a method to truncated to 6 bits per primary color (compression from 8 to 6

bits) see Fig. 5A.

Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was

made to incorporate the teaching of Trueblood into Newman because Newman discloses a

method of image processing systems employing look-up tables for transforming from first

coordinate apace to a second coordinate space. And Trueblood discloses the compression of

lookup table with an identifier to store the LUT, in order to increase its display capability or to

save memory space or to be able to transfer faster from different locations, the compression of

LUTs are essential

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time

policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the mailing

date of this final action.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Javid A Amini whose telephone number is 703-605-4248. The

examiner can normally be reached on 8-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Michael Razavi can be reached on 703-305-4713. The fax phone numbers for the

organization where this application or proceeding is assigned are 703-746-8705 for regular

communications and 703-746-8705 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding

should be directed to the receptionist whose telephone number is 703-306-0377.

Javid Amini
April 18, 2003

MICHAEL RAZAVI
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600